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## **PRESS RELEASE**

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### **New Zealand Mudsnail, an Invasive Species, Detected at Lee's Ferry**

New Zealand Mudsnails, an aquatic nuisance and invasive species, have been detected at Lee's Ferry in Glen Canyon National Recreation Area. These snails are not native to North America and may have harmful effects on the river ecosystem. They are not welcome visitors!

Mudsnails were unintentionally introduced into North America and over the past two years have emerged as a serious concern in the Western United States. New Zealand Mudsnails are very small, about one-eighth of an inch in diameter and can be very hard to detect when they first arrive. They can reach very high densities, as many as a half a million per square meter. They provide very little or no food value to fishes and other aquatic life and can compete with other animals for nutrients, food, and space.



Lee's Ferry is a very popular trout fishery located on the Colorado River in the Glen Canyon National Recreation Area in Northern Arizona. Lee's Ferry is located just below the Glen Canyon Dam that forms Lake Powell, and above Grand Canyon National Park.

Snail populations have been on the rise over the past several years. Observations of scientists, anglers, and fishing guides indicate that snail populations have been increasing. Concern has been expressed that the snail community at Lee's Ferry might include New Zealand Mudsnails. Samples collected earlier this year were submitted to experts in Montana for identification. This evaluation confirmed that Mudsnails are present.

New Zealand Mudsnaills arrived in the Western United States during the 1980s, where they were detected in the Snake River in Idaho and the Madison River in Montana. They have subsequently spread to Yellowstone National Park and in 2001 were detected in the Owens River in California. There are potentially other infested sites that have not yet been identified.

Mudsnaills are very small but are also very tough. They tolerate temperatures ranging from near freezing to about 78 degrees Fahrenheit. While they are aquatic, they are well adapted to surviving some period out of water. The shell comes equipped with an operculum or "hatch" that can seal the snail inside and protect it from drying and from predators. In a moist environment, the Mudsnaill can survive out of water for at least several days. There is evidence that they can pass through the digestive tracts of fish and potentially other possible predators. This makes them very effective "hitch-hikers".

"We don't know exactly how or exactly when Mudsnaills first arrived at Lee's Ferry. We will work with scientists with the Grand Canyon Monitoring and Research Center (Biological Research Division - US Geological Survey) to see if it is possible to identify about when they first arrived. They likely arrived as a hitch-hiker," said Larry Riley, Arizona's Chief of Fisheries.

Riley explained that the most likely pathways for travel to Lee's Ferry were on boats or gear used by anglers that had visited infested sites, on equipment used by scientists at infested sites, or potentially even with migratory birds that had visited infested sites. Because the snails are so small, they can hitch-hike along the seams of waders or in the soles of wading boots.

The New Zealand Mudsnaill doesn't require a partner to reproduce. The snails can reproduce asexually, through a process referred to as parthenogenesis. A single living snail can apparently start a new population.

"We do not have a method for removing these snails from the Colorado River at this point. Our best approach is to do all we can to minimize the possibility that they are transported to other locations. We are placing signs and information at the Lee's Ferry Boat Ramp to inform the angling and boating public, and asking them to make sure they don't unwittingly transport mudsnails to other locations," Riley said.

Anglers and boaters can accomplish this by doing the following.

- 1) Inspect and clean fishing gear (waders, boots, nets, etc.) and boats and trailers before leaving a fishing or boating site. Remove any vegetation, mud, or foreign material that may be attached. Drain water from your boat's bilge before you pull away from the site.
- 2) Remove the stomach and digestive tract from any harvested fish at the site you catch them, mudsnails can be transported in the guts of fish. Dispose of that material in receptacles on site if at all possible. Dispose of any fish remains at a sanitary landfill - don't flush them down your drains at home.
- 3) Dry your gear thoroughly between uses at different sites. Our hot Arizona sunshine is an asset. Cleaning and thoroughly drying equipment in the hot sun for several hours can kill mudsnails. Washing down equipment with a strong soap solution, rinsing with tap water that drains onto the ground, and drying in the sun should do the trick.

"This is a serious threat to Arizona's wildlife resources, and it will take the combined efforts of all of Arizona's citizens to keep it from spreading," Riley said.

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*Media Note: Additional information on New Zealand Mudsnaills can be obtained from the USGS at: [www.fcsc.usgs.gov](http://www.fcsc.usgs.gov) and at [www.anstaskforce.gov](http://www.anstaskforce.gov) . A printable fact sheet can be downloaded from the Web at:  
[http://www.fcsc.usgs.gov/Nonindigenous\\_Species/New\\_Zealand\\_Mudsnail/mudsnail2.pdf](http://www.fcsc.usgs.gov/Nonindigenous_Species/New_Zealand_Mudsnail/mudsnail2.pdf)*

*Proposed signage for Lee's Ferry follows*

ATTENTION WATER USERS AND RECREATIONISTS

**THESE WATERS CONTAIN NEW ZEALAND**  
**MUD SNAILS**

The **New Zealand Mud Snail (NZMS)** is not native to North America and has shown the capability to over-run the native invertebrates of waters where they are introduced. Densities as high as 1,000,000/square yard have been sampled in spring areas near the Snake River in central Idaho, and over 300,000/square yard in the Madison River in Yellowstone National Park. A new colony can spring from a single NZMS due to their mode of reproduction - a single individual can reproduce with out a partner - and they can produce several generations per year.

Trout receive little food value from any NZMS they eat. The small size of each individual snail and hardness of the shell prevent cracking when ingested by trout, and the NZMS has an operculum (flap) that it closes over its shell opening to protect itself. Most NZMS pass through trout unharmed.

Help maintain a healthy environment for aquatic wildlife and recreational activities - prevent the spread of exotic nuisance organisms.

Although New Zealand Mud Snails are Aquatic they can live several days out of the water, and may be attached to your waders or gear. Please take the following precautions to prevent their spread:



- 1) Develop an attitude of concern; accept that recreational activities are a potential means of transportation for aquatic nuisance species.
- 2) Mud Snails and other aquatic nuisance species may be transported in the gut and tissues of live and dead fish. Disembowel any harvested fish at the site you catch them. Dispose of other fish remains in landfills or other locations away from water.
- 3) Before leaving the site, inspect and clean any gear that contacted the water, including boats and trailers - remove all vegetation, mud, grit, and any aquatic plants and animals that are attached to your gear, drain water from boats and other gear.
- 4) Dry your gear thoroughly by spraying with 409 or a similar soap solution and letting waders or boots dry in the hot sun for several hours before entering another waterbody, or clean it with tap water that drains onto the ground, not down a drain or into another water source, or use separate gear at the next site you visit.

**PLEASE HELP**

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